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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/798,368

03/12/2004

Hiroyuki Takahashi

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08/24/2005

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EXAMINER

HOANG, HUAN

ART UNIT

PAPER NUMBER

2827

DATE MAILED: 08/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/798,368

Applicant(s)

TAKAHASHI ET AL.

Examiner

Huan Hoang

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17-22 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4, 9, 10 and 12 is/are rejected.
- 7) ☒ Claim(s) 3, 5-8, 11 and 13-16 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Objections

1. Claims 1-8 are objected to because of the following informalities:

The phrase "said active regions" (claim 1, line 10) should be "said active region" since there is only one straight active region recited in claim 1 and the phrase "said row address signals" (claim 7, line 4) should be "said row address signal" since there is only one row address signal recited in claim 6.

The word "a" in "a semiconductor substrate" (claim 9, lines 9-10) should be "the".
Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Yang et al. (US Patent No. 6,136,645).

Yang et al. discloses a semiconductor memory device having all the elements as recited in claims 1 and 4 as follows:

a plurality of word lines (91,125, Fig. 6) each extending in a first direction;

a plurality of bit lines (79, 109, Fig. 6) each extending in a second direction crossing the first direction;

a straight active region (73, 103) extending in a direction different from the first and second directions;

a plurality of memory cells formed in the active regions (Fig. 6).

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

5. Claims 9 and 12 are rejected under 35 U.S.C. 102(a) as being anticipated by Osabe et al..

Osabe et al. discloses a semiconductor memory device having all the elements as recited in claims 9 and 12 as follows:

a plurality of word lines (J2, Fig. 1);

a plurality of bit lines (J4, Fig. 1);

an active region (J1, paragraph [0078], lines 12-13) formed on a semiconductor substrate and defined by an element separation region (J17, paragraph [0078], line 12), a boundary between the active region and the element separation region being substantially straight between at least three adjacent word lines (Fig. 1);

a plurality of memory cells (J20, Fig. 5) formed on the semiconductor substrate.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al. in view of Yomishima.

Yang et al. discloses all the limitations as recited in claim 2 except for the memory cell including a capacitor and two transistors. However, Tomishima discloses a memory cell having two transistors and one capacitor for high data holding characteristic (Astract and Fig. 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Yang et al. by using the memory cell having two transistors and one capacitor for high data holding characteristic.

8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Osabe et al. in view of Yomishima.

Osabe et al. discloses all the limitations as recited in claim 10 except for the memory cell including a capacitor and two transistors. However, Tomishima discloses a memory cell having two transistors and one capacitor for high data holding characteristic (Astract and Fig. 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Osabe et al. by using the

memory cell having two transistors and one capacitor for high data holding characteristic.

Allowable Subject Matter

9. Claims 17-22 are allowed.
10. Claims 3, 5-8, 11 and 13-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not teach or suggest the following:

the capacitor contact, the first bit line contact and the second bit line contact as recited in claim 3.

a plurality of bit line contacts each connected to a single bit line, there being four word lines between the adjacent bit line contacts.

first and second row decoders driving a first set of said word lines and second set of said word lines.

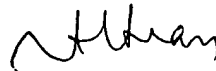
the connections of a first memory cell and a second memory cells with the bit lines as recited in claim 17.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huan Hoang whose telephone number is (571) 272-1779. The examiner can normally be reached on Mon-Fri 8:30AM-5:00PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoai Ho can be reached on (571) 272-1777. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Huan Hoang
Primary Examiner
Art Unit 2827

HH
8/22/05